# Development of Learning Video Media Using the Powtoon Application to Improve Literacy Skills

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**Abstract:** An animated video learning medium utilizing the Powtoon platform was developed to strengthen literacy proficiency in Indonesian language education at the vocational high school level. Employing a Research and Development (R&D) framework with the ADDIE model, the study systematically proceeded through stages of analysis, design, development, implementation, and evaluation. A total of 70 tenth-grade students from SMK Negeri 2 Batam participated as purposively selected subjects. Expert validation and user assessments confirmed that the media met high-quality standards in content accuracy, visual appeal, and linguistic clarity. Students and teachers reported the platform to be intuitive and well-suited to the learning preferences of vocational learners. Quantitative analysis revealed a substantial increase in student achievement, with an N-Gain score of 0.53, placing it within the moderate-to-high improvement range. These results affirm that Powtoon-based animated learning not only enhances engagement but also significantly boosts literacy outcomes. The media presents a powerful pedagogical tool for modern classrooms, particularly in overcoming passive and text-heavy instructional barriers. Future research should explore its application to other language domains and broader educational contexts to assess its generalizability and long-term impact.

**Keywords:** Animated video; Educational technology; Learning; Powtoon; Vocational

## Introduction

Education is a fundamental long-term investment in building the quality of human resources and the nation's civilization. In the context of Indonesia, the mandate of the opening of the 1945 Constitution expressly states the importance of educating the nation's life as the main goal of education. One of the important indicators in assessing the quality of education is the level of literacy of students, especially reading literacy which is the foundation of various other learning skills. However, based on the results of the survey PISA (Programme for International Student Assessment) 2022 survey (Adawiyah et al., 2023; Putri et al., 2025). The reading literacy ability of Indonesian students is still relatively low, which occupies the 71st position out of 81 countries. This condition shows that there are serious challenges in the education system, especially in forming a generation that is capable of literacy and adaptive to the dynamics of the times.

At all levels of education, including vocational high schools (SMK), literacy has an important role in shaping listening, reading, writing, and speaking skills that are integrated in language skills (Amalia et al., 2023; Anshar et al., 2023; Dhanil & Mufit, 2023). However, various studies and observations in the field show that Indonesian language learning in vocational schools still faces obstacles, especially in the limitations of learning media that are interesting, interactive, and in accordance with the characteristics of vocational students. Observations by researchers at SMK Negeri 2 Batam City show that the average literacy ability of students in the aspects of reading, writing, and speaking is still below the expected competency standard. Learning tends to be conventional and one-way, while the media used is still dominated by package books and manual workbooks.

Responding to these challenges, the use of technology-based learning media is a strategic alternative to increase learning effectiveness (Wahab et al., 2024). One potential form of media is animated videos that are able to combine visual and audio aspects to attract attention and improve students' understanding (Nuari et al., 2024). Powtoon is one of the popular animation video development applications and can be used to create learning presentations that are dynamic, engaging, and appropriate to the contemporary context (Dewi & Kamaludin, 2022; Widyawati & Kamaludin, 2024). Powtoon's advantage lies in its ability to present visual narratives with moving animations, background sounds, and interactive graphic elements, which are very suitable for use in Indonesian language learning for the digital native generation in vocational schools.

Several previous studies have shown the effectiveness of animated video media in improving the quality of learning. Khulaifatuzzahra et al. (2024) proving that the use of Powtoon in learning can significantly increase student learning motivation. Meanwhile, Rakhman et al. (2024) revealed that digital-based animation media is very effective in improving the understanding of material among elementary school students. Other research by Aprianti et al. (2023) showed a significant increase in students' interest in learning after using animated videos in language learning. However, the three studies have not specifically highlighted the use of Powtoon media in the context of Indonesian learning in vocational schools, especially in improving the literacy of students who incidentally have different learning characteristics and needs from other levels.

Thus, there is a fairly clear research gap, namely the lack of development of animation video-based learning media using the Powtoon application in the context of Indonesian learning in vocational schools. In addition, there has been no previous research that has systematically tested the validity, practicality, and effectiveness of this media in improving students' literacy skills in the vocational environment (Usman & Ningsih, 2020). This gap is what this research wants to fill, by developing Powtoon animation video media that is in accordance with the characteristics of vocational school students and the content of Indonesian subject competencies, especially in class X in the even semester.

Based on this background and empirical study, the purpose of this article is to describe the process of developing learning animation video media using the Powtoon application in Indonesian subjects for grade X of vocational school. This research also aims to test the validity, practicality, and effectiveness of the media developed in improving students' literacy skills. It is hoped that the results of this development can contribute to learning practices that are more innovative, interactive, and relevant to the needs of vocational students in the digital era.

## Method

This research uses a Research and Development (R&D) approach by adapting the model development steps of ADDIE (Analysis, Design, Development, Implementation, Evaluation) that have been adjusted to practical needs in the field (Gall et al., 2002; Sugiyono, 2013). The main focus of this research is to produce a valid, practical, and effective Powtoon-based animation learning media product to improve the quality of literacy learning at the vocational school level. The development procedure began with a need analysis, conducted through classroom observation and interviews to identify existing challenges literacy learning (Alika & Radia, 2021). The was followed by design stage, where a video script and animation framework were developed in accordance with curriculum goals and students' characteristics.

The next phase involved expert validation by specialists in instructional technology and Indonesian language education to assess the media's content accuracy, visual appeal, and pedagogical alignment. A limited-scale trial was then conducted involving small student groups, with subsequent revisions made based on feedback. Finally, the refined product was tested on a broader scale to evaluate its practical use and effectiveness.
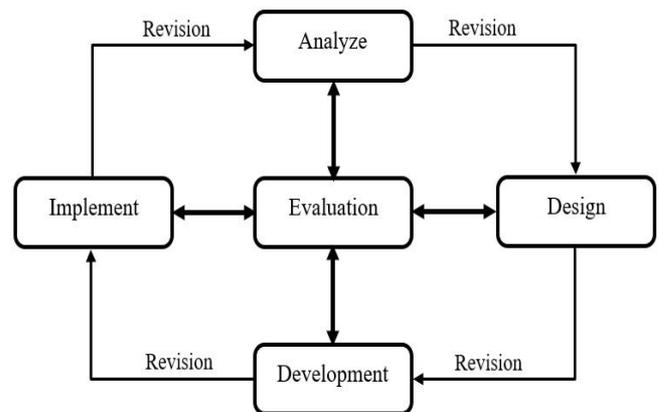


**Figure 1.** ADDIE development model (Darmansyah, 2023)

Data collection integrated various techniques including interviews, classroom observations, questionnaire responses from students and teachers, and documentation of student learning outcomes. Instruments included expert validation sheets, response questionnaires, and achievement tests. Quantitative and qualitative descriptive approaches were employed to analyze the data. Media validity was judged based on

expert reviews with categorization ranging from "invalid" to "very valid." Practicality was evaluated through Likert-scale responses indicating usability and engagement, while effectiveness was measured by comparing pretest and posttest scores using gain score calculations and t-tests.

The research subjects consisted of 70 tenth-grade students from SMK Negeri 2 Batam, divided into two groups (X PH1 and X PH2), selected purposively based on their literacy proficiency, which was observed to be below the expected competency standards in the Indonesian language curriculum. The findings from each stage of development contributed to refining a media product that was pedagogically sound, contextually relevant, and empirically tested for its educational impact.

## Result and Discussion

This research produced an animation video-based learning media product using the Powtoon application which is specifically designed for Indonesian learning in grade X of SMK. The development process follows the stages of the ADDIE model in sequence, starting from the analysis of needs to the evaluation of the effectiveness of the media. In the initial stage, an analysis of the learning context was carried out and the identification of obstacles faced by teachers and students in learning Indonesian, especially in literacy aspects such as reading poetry. However, literacy skills addressed in this study are not limited to poetry comprehension alone, but also encompass broader domains including reading, writing, speaking, and listening, as integrated components of language proficiency. Based on this analysis, the media was designed to include voice narration, visual illustrations, and content aligned with the basic competencies outlined in the curriculum, ensuring that the media supports the holistic development of students' literacy abilities.

After the product is developed, a validity test is carried out by five validators consisting of media experts, material experts, and learning practitioners, confirmed the media's high quality in content accuracy, visual design, and language clarity, reinforcing its pedagogical value (Ni'mah et al., 2023). The validation results showed that the media met the criteria very valid with a score 97.3% in terms of appearance, material content, and language. This indicates that media is suitable for use in the learning process because it meets content quality standards and presentation. The results of the recapitulation of the three aspects can be seen in Table 1.

**Table 1.** Recapitulation of validation results of media experts, subject matter experts, and linguists

| Item | Percentage (%) | Category |
| --- | --- | --- |
| Appearance | 100 | Very valid |
| Material Content | 100 | Very valid |
| Language | 92 | Very valid |
| Average | 97.3 | Very valid |

The practicality test was carried out through the distribution of questionnaires to teachers and students in classes X PH1 and X PH2. Based on the results of the responses given, the majority of respondents stated that Powtoon media is easy to use, attractive, and helps with understanding of the material taught. Teachers also stated that this media is very supportive of the teaching process because it enriches the variety of material delivery and increases student participation in the classroom (Marini et al., 2023; Samosir et al., 2022). In general, media is considered very practical and in accordance with the characteristics of vocational school students who prefer visual and interactive learning. The results of the recapitulation questionnaire on the practicality of students' responses to animation learning media products that have been tested at SMK Negeri 2 Batam can be seen in Table 2.

**Table 2.** Recapitulation of the practicality of student response media

| Item | Percentage (%) | Category |
| --- | --- | --- |
| Readability | 97 | Very practical |
| Content | 96 | Very practical |
| Language | 100 | Very practical |
| Average | 99 | Very practical |

In the final stage, a media effectiveness test was carried out by comparing student learning outcomes between the experimental group using Powtoon media and the control group using conventional methods. The results showed that there was a significant increase in the post-test results of the experimental group students (Caella & Yulianto, 2024). The average value increased substantially compared to the pre-test value, with the N-Gain value reaching the medium to high category (0.53 or 65%). In contrast, the control group showed only a low increase (N-Gain of 0.25 or 25%). This data shows that Powtoon media has a positive influence on improving literacy skills (Matta & Chamoun, 2025), especially in understanding and appreciating literary texts such as poetry.

Overall, the results of this study prove that the Powtoon-based animation video media developed not only meets the validity aspects of experts, but also proves to be practical for use in the classroom and effective in improving student learning outcomes. Thus, this media deserves to be used as an innovative

alternative in Indonesian language learning in vocational schools, especially in overcoming monotonous learning obstacles, lack of visuals, and minimal active participation from students.

**Table 3.** N-Gain score results

| Class | Pretest Average | Posttest Average | Posttest-Pretest | Ideal Score (100) Pretest | N-Gain Score |
|---|---|---|---|---|---|
| Experiment | 58 | 89.5 | 31.5 | 53.45 | 0.53 |
| Control | 52 | 65 | 13 | 25 | 0.25 |

The results of the study show that Powtoon-based animation video learning media has proven to be valid, practical, and effective in Indonesian learning to improve the literacy skills of vocational school students. These findings reinforce the relevance of modern learning design theory that emphasizes the importance of integrating technology in the learning process (Darmansyah, 2020; Syarifuddin et al., 2022). According to Mayer (2009), In Multimedia Learning Theory, the simultaneous delivery of material through visual and audio media can strengthen dual-channel memory and reduce the cognitive load of students. This is in line with the characteristics of Powtoon media which presents text, images, sounds, and animations in an integrated manner, thus allowing students to better understand the material in a fun and not boring way.

The high validity of the developed media indicates that the content, appearance, and structure of the media have met good pedagogical criteria. This is in accordance with the opinion from Miftah & Rokhman (2022) which emphasizes that learning media must meet three main principles, namely: clarity of message, ease of use, and suitability with the characteristics of students. Powtoon media allows teachers to present material with smooth transitions, clear narratives, and visual illustrations that support conceptual understanding, especially in poetry materials that require aesthetic and interpretive elements.

Practically, the results of the questionnaire showed that students felt more motivated and actively involved in learning using animated videos. This is in line with the ARCS (Attention, Relevance, Confidence, Satisfaction) theory of Keller (2010), which states that interesting learning media is able to build attention and relevance, increase students' confidence in understanding the material, and provide learning satisfaction. The animations in Powtoon manage to grab students' attention through dynamic visual displays and communicative narratives (Chandel & Lim, 2024), making them more active in listening and understanding the material well.

Findings regarding the effectiveness of media can also be studied through the perspective of Constructivist Learning Theory (Romdhon et al., 2024),

where students build their understanding through interaction with contextual and meaningful learning resources. According to Vygotsky (1981), Effective learning occurs when students are able to actively build knowledge through media that is relevant to their social and cultural contexts (Eviyanti et al., 2022; Hadianto et al., 2022; Matthews, 2025; Rahmawati et al., 2024). In this case, Powtoon media provides a space for students to understand the content of poetry not only in terms of language, but also visual and audio expressions that reinforce meaning. This makes learning more meaningful because it involves a rich sensory experience.

Furthermore, a significant increase in learning outcome scores in the experimental group compared to the control group showed that animation media was able to facilitate the visual-auditory learning style of vocational school students, which according to Leming (2001), more dominant in vocational students. This learning style requires learning media that is not only verbal or textual, but also presents information in the form of moving images, narratives, and interactive illustrations that facilitate understanding. This explains why the group using Powtoon showed a greater improvement in understanding Indonesian material, especially in poetry reading skills.

In addition, the use of Powtoon media supports the principles of technology-based learning as recommended in the Independent Curriculum, which gives teachers the flexibility to choose digital and contextual-based learning approaches (Chimbutane et al., 2026). Learning using Powtoon provides an alternative to conventional methods that tend to be one-way and not in accordance with the digital development of students (Rahmawati & Suhendra, 2021; Satria et al., 2023). By presenting media that are close to students' daily lives—such as short videos, animations, and infographics—teachers can bridge the gap between teaching materials and the reality of students' lives (Safitri et al., 2025; Sugilar et al., 2023).

In other words, Powtoon media is not just a teaching tool, but serves as a pedagogical bridge that makes Indonesian material more concrete, communicative, and contextual. This research also reinforces the importance of a multimodal learning approach in 21st century education (Toharudin & Kurniawan, 2023), which combines multiple communication channels—visual, auditory, and kinesthetic—to optimize students' learning experiences.

## Conclusion

Based on the results of development and testing, it can be concluded that Powtoon-based animation video

learning media has proven to be valid, practical, and effective in improving students' literacy skills, especially in Indonesian learning in grade X of SMK. This media is able to answer the challenges of conventional learning that are less interesting by presenting more interactive, visual, and contextual material according to the characteristics of vocational students. The validation of the experts showed the feasibility of the media in terms of content, display, and language, while the results of the questionnaire and effectiveness test indicated that students were more motivated and experienced a significant improvement in learning outcomes. Therefore, the use of Powtoon can be recommended as an alternative innovative learning media in strengthening literacy in vocational schools. For further research, it is recommended that this media be further developed on other language skills, such as speaking and writing, and tested at different levels and subjects to determine a wider scope of effectiveness.

**Author Contributions**

D.A.M. develops research concepts, designs methodologies, analyzes data, writes articles, and conducts research activities; R., Z.Z., and F.Y. review and assess each stage of the article writing process and the implementation of the research.

**Conflicts of Interest**

The authors declare no conflict of interest.

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